

State of Missouri

*Unofficial Table Changes for
10 CSR 20-7.031
Water Quality Standards
Tables A through F and I*



Missouri Department of Natural Resources
Water Protection and Soil Conservation Division
Water Protection Program

Table A—Criteria for Designated Uses

IAOL = Protection of Aquatic Life
H = Human Health Protection—Fish Consumption
HDWS = Drinking Water Supply
IVGRW = Irrigation/Groundwater
VLWW = Livestock, Wildlife Watering
VWBC = Whole-Body-Contact Recreation
VHSCR = Groundwater/Secondary Contact Recreation

Pollutant ($\mu\text{g/l}$)	I AOL	H	III	IV	V	VI	VII
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Chlorine (total residual)							
cold-water	2						
warm-water chronic—	10						
acute—	19						
Cyanide (amenable to chlorination)							
chronic—	5						
acute—	22						
Hydrogen sulfide (un-ionized)	2						

Pollutant (mg/l)	I AOL	H	HDWS	IVGRW	VLWW	VI	VII
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Chloride chronic—	230(+)		250				
acute—	860(+)						
Sulfate	(+)		250				
Fluoride			4	4	4		
Nitrate-N			10	10			10
Dissolved oxygen (minimum)							
warm-water and cool-water fisheries	5						
cold-water fisheries	6						
Oil and grease	10						

+See [subsection 10 CSR 20-7.031 \(4\)\(L\)](#).

Pollutant (colonies/100 ml)	I WBC-A	H WBC-B	III SCR	IV	V	VI	VII
Fecal Coliform Bacteria *	200		1800			200	
E. coli Bacteria*	126	548	1134				

*Geometric mean during the recreational season in waters designated for recreation or at any time in losing streams. The recreational season is from April 1 to October 31.

Pollutant ($^{\circ}\text{F}$)	I AOL	H	III	IV	V	VI	VII
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Temperature (maximum)							
warm-water	90						
cool-water	84						
cold-water	68						
Temperature (maximum change)							
warm-water	5						
cool-water	5						
cold-water	2						

Pollutant (percent saturation)	I AOL	H	III	IV	V	VI	VII
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Total Dissolved Gases	110%						
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I AOL =Protection of Aquatic LifeII HHF =Human Health Protection—Fish ConsumptionIII DWS = Drinking Water SupplyIV IRR =IrrigationV LWW=Livestock, Wildlife WateringVI = Whole Body Contact RecreationVII GRW = Groundwater

Pollutant ($\mu\text{g/l}$)	<u>I AOL</u>	<u>II HHF</u>	<u>III DWS</u>	<u>IV IRR</u>	<u>V LWW</u>	<u>VI</u>	<u>VII GRW</u>
Metals Non-hardness Dependant							
Aluminum (acute)	750						
Antimony		4300	6				6
Arsenic	20		50	100			50
Barium			2000				2000
Beryllium	5		4	100			4
Boron					2000		2000
Cadmium	*		Hardness		5		5
	<u><125</u>	<u>125</u>	<u>200</u>	<u>>200</u>			
chronic:							
CWF	1.1	1.4	1.8				
Lakes	9.1	9.1	9.1				
GWWF	9.1	11.8	15.5				
LWWF	11.8	16.4	20				
acute:							
CWF	3.7	5.9	8.1				
Lakes & GWWF	31	49	68				
LWWF	43	68	94				
Chromium <u>II</u>	*			100	100		100
chronic:							
Lakes	11 $\mu\text{g/l}$						
CWF, GWWF	42						
LWWF	190						
acute:							
Lakes	16 $\mu\text{g/l}$						
CWF & GWWF	62						
LWWF	280						
Chromium VI							
Chronic	10						
Acute	15						
Cobalt							
Copper	*		Hardness		1300		
	<u><125</u>	<u>125</u>	<u>200</u>	<u>>200</u>			
chronic:							
Lakes, CWF, GWWF	19 $\mu\text{g/l}$	28	36				
LWWF	29	41	53				
acute:							
Lakes, CWF, GWWF	29	43	56				
LWWF	44	64	84				
Iron	1000				300		300
Lead			Hardness		15		15
	<u><125</u>	<u>125</u>	<u>200</u>	<u>>200</u>			
chronic:							
all waters	9	16	23				
acute:							
all waters	63	104	150				

CWF=Cold water fisheryGWWF=General warm water fisheryLWWF=Limited warm water fishery*See Metals (Hardness Dependant)

IAQL =Protection of Aquatic LifeHHHF =Human Health Protection—Fish ConsumptionDWWS = Drinking Water SupplyIIRR =IrrigationVLWW=Livestock, Wildlife WateringVI = Whole Body Contact RecreationVIGRW = Groundwater

Pollutant ($\mu\text{g/l}$)	<u>I</u> AQL	<u>H</u> <u>HHF</u>	<u>D</u> <u>WWS</u>	<u>I</u> <u>IRR</u>	<u>V</u> <u>LWW</u>	<u>V</u> <u>I</u>	<u>V</u> <u>I</u> <u>G</u> <u>RW</u>
Metals (Non-hardness Dependant) continued							
Manganese			50				50
Mercury			2				2
chronic:	<u>0.5</u>						
all waters	<u>0.5</u>						
acute:	<u>2.4</u>						
all waters	<u>2.4</u>						
Nickel	*	<u>Hardness</u>		100			100
		<u><125</u> <u>125</u> <u>200</u> <u>>200</u>					
chronic:							
Lakes	160	220	280				
CWF, GWWF	360	500	650				
LWWF	425	600	770				
acute:							
Lakes	1400	2000	2500				
CWF, GWWF	3200	4600	5800				
LWWF	3800	5400	6900				
Selenium	5			50			50
Silver	*	<u>Hardness</u>		50			50
		<u><125</u> <u>125</u> <u>200</u> <u>>200</u>					
acute:							
all waters	3.5	7	11				
Thallium		<u>*Hardness</u>		6.3			2
Zinc		<u><125</u> <u>125</u> <u>200</u> <u>>200</u>		5000			5000
chronic:							
CWF	172	236	305				
Lakes	103	147	187				
GWWF	241	340	433				
LWWF	1050	1483	1893				
acute:							
CWF	185	264	337				
Lakes	112	161	205				
GWWF	264	371	479				
LWWF	1154	1623	2073				

CWF=Cold water fishery

GWWF=General warm water fishery

LWWF=Limited warm water fishery

*See Metals (Hardness Dependant)

AOL= Protection of Aquatic Life

Pollutant (µg/l)		AOL
<u>Metals (Hardness Dependant)</u>		
<u>Cadmium (µg/L)</u>	Acute:	$e^{(1.0166*\ln(\text{Hardness}) - 3.062490) * (1.136672 - (\ln(\text{Hardness})*0.041838))}$
	Chronic:	$e^{(0.7409*\ln(\text{Hardness}) - 4.719948) * (1.101672 - (\ln(\text{Hardness})*0.041838))}$
<u>Chromium III (µg/L)</u>	Acute:	$e^{(0.8190*\ln(\text{Hardness}) + 3.725666) * 0.316}$
	Chronic:	$e^{(0.8190*\ln(\text{Hardness}) + 0.684960) * 0.860}$
<u>Copper (µg/L)</u>	Acute:	$e^{(0.9422*\ln(\text{Hardness}) - 1.700300) * 0.960}$
	Chronic:	$e^{(0.8845*\ln(\text{Hardness}) - 2.044953) * 0.960}$
<u>Lead (µg/L)</u>	Acute:	$e^{(1.273*\ln(\text{Hardness}) - 1.460448) * (1.46203 - (\ln(\text{Hardness})*0.145712))}$
	Chronic:	$e^{(1.273*\ln(\text{Hardness}) - 4.704797) * (1.46203 - (\ln(\text{Hardness})*0.145712))}$
<u>Nickel (µg/L)</u>	Acute:	$e^{(0.8460*\ln(\text{Hardness}) + 2.255647) * 0.998}$
	Chronic:	$e^{(0.8460*\ln(\text{Hardness}) + 0.058978) * 0.997}$
<u>Silver (µg/L)</u>	Acute:	$e^{(1.72*\ln(\text{Hardness}) - 6.588144) * 0.850}$
<u>Zinc (µg/L)</u>	Acute:	$e^{(0.8473*\ln(\text{Hardness}) + 0.884211) * 0.978}$
	Chronic:	$e^{(0.8473*\ln(\text{Hardness}) + 0.785271) * 0.986}$

	Hardness									
	50-74	75-99	100-124	125-149	150-174	175-199	200-224	225-249	250+	
<u>Cadmium</u>										
Acute:	2.4	3.6	4.8	5.9	7.1	8.2	9.4	10.5	11.6	
Chronic:	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	
<u>Chromium III</u>										
Acute:	323	450	570	684	794	901	1005	1107	1207	
Chronic:	42	59	74	89	103	117	131	144	157	
<u>Copper</u>										
Acute:	7	10	13	17	20	23	26	29	32	
Chronic:	4	6	7	9	10	12	13	15	16	
<u>Lead</u>										
Acute:	30	47	65	82	100	118	136	154	172	
Chronic:	1	2	3	3	4	5	5	6	7	
<u>Nickel</u>										
Acute:	261	367	469	566	660	752	842	930	1017	
Chronic:	29	41	52	63	73	84	94	103	113	
<u>Silver</u>										
Acute:	1.0	2.0	3.2	4.7	6.5	8.4	10.6	13.0	15.6	
<u>Zinc</u>										
Acute:	65	92	117	142	165	188	211	233	255	
Chronic:	59	84	107	129	151	172	193	213	233	

IAOL = Protection of Aquatic LifeHHHF = Human Health Protection—Fish ConsumptionHDWS = Drinking Water SupplyIV = IrrigationV = Livestock, Wildlife WateringVI = Whole Body Contact RecreationVIGRW = Groundwater

Pollutant (µg/l)	<u>I</u> AOL	<u>HHHF</u>	<u>HDWS</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VIGRW</u>
Organics							
Acrolein		780	320				320
Bis-2-chloroisopropyl ether		4360	1400				1400
2, chlorophenol		400	.1				.1
2,4-dichlorophenol	7	790	93				93
2,4-dinitrophenol		14,000	70				70
2,4-dimethylphenol		2300	540				540
2,4,5-trichlorophenol		9800	2600				2600
2,4,6-trichlorophenol		<u>76.5</u>	2				2
2-methyl-4,6-dinitrophenol		765	13				13
Ethylbenzene	320		700				700
Hexachlorocyclopentadiene	.5		50				50
Isophorone		2600	36				36
Nitrobenzene		1900	17				17
Phenol	100		100				300
Dichloropropene		1700	87				87
Para(1,4)-dichlorobenzene		2600	75				75
Other Dichlorobenzenes		2600	600				600
1,2,4-trichlorobenzene		940	70				70
1,2,4,5-tetrachlorobenzene		2.9	<u>38.23</u>				<u>38.23</u>
pentachlorobenzene		<u>85.41</u>	<u>74.35</u>				<u>74.35</u>
1,1,1-trichloroethane			200				200
1,1,2-trichloroethane		42	5				5
2,4-dinitrotoluene		9	.11				.11
1,2-diphenylhydrazine		.54	.04				.04
di (2-ethylhexyl) adipate			400				400
n-nitrosodiphenylamine		16	5				5
n-nitrosopyrrolidene		<u>93.91.9</u>					
2-chloronaphthalene	4300						
n-nitrosodi-n-propylamine			1.4				
Pollutant (µg/l)	<u>I</u> AOL	<u>H</u>	<u>HDWS</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VIGRW</u>
Pesticides							
Demeton		.1					
Endosulfan							
chronic—		.056					
acute—		0.11					
Guthion		.01					
Malathion		.1					
Parathion		.04					
2,4-D			70				70
2,4,5-TP			50				50
Chlorpyrifos	.04						
Alachlor			2				2
Atrazine			3				3
Carbofuran			40				40
Dalapon			200				200
Dibromochloropropane			.2				.2
Dinoseb			7				7
Diquat			20				20
Endothall			100				100
Ethylene dibromide			.05				.05
Oxamyl (vydate)			200				200
Picloram			500				500
Simazine			4				4
Glyphosate			700				700

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Pollutant ($\mu\text{g/l}$)	<u>I</u> AOL	<u>HHHF</u>	<u>HDWS</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u> GRW
Persistent, Bioaccumulative, Man-Made Anthropogenic Toxics (+)							
PCBs							
PCBs	.000045						.000045
<u>4,4'-dichlorodiphenyltrichloroethane (DDT) and metabolites</u>	<u>.0020</u>	<u>.00059</u>	<u>.0020</u>	<u>.00059</u>			<u>.0020</u>
<u>4,4'-dichlorodiphenylchloroethylene (DDE)</u>	<u>.000059</u>	<u>.000059</u>					<u>.000059</u>
<u>4,4'-dichlorodiphenylchloroethane (DDD)</u>	<u>.000084</u>	<u>.000083</u>					<u>.000083</u>
Endrin	.0023	2					2
Endrin aldehyde	.0023	.75					.75
Aldrin	.000079	.00013					.00013
Dieldrin	.000076	.00014					.00014
Heptachlor	.0038	.0002	0.4				0.4
Heptachlor epoxide		.00011	0.2				0.2
Methoxychlor	.03		40				40
Mirex	.001						
Toxaphene		.000073	3				3
Lindane (gamma-BHC)	.062	.2					.2
Alpha,beta,delta-BHC	.0074	.0022					.0022
Chlordane	.00048	2					2
Benzidine	.00053	.00012					.00012
<u>2,3,7,8-tetrachlorodibenzo-p-dioxin (ng/l)*</u>	<u>.000014</u>	<u>.030</u>	<u>.000013</u>				<u>.030</u>
<u>TCDD(dioxin)</u>							
Pentachlorophenol**	3.2–pH 6.5 5.3–pH 7.0 8.7–pH 7.5 14.0–pH 8.0 23.0–pH 8.5	8		1			1

+Many of these values are below current detection limits; analyses will be determined by the 17th edition of *Standard Methods* or the most current methods approved by the Environmental Protection Agency.

*Units for dioxin are nanograms/liter (ng/l); 1 $\mu\text{g/l}$ = 1000 ng/l.

**Toxic impurities may be present in technical-grade pentachlorophenol; monitoring and discharge control will assure that impurities are below toxic concentrations.

~~I~~AOL = Protection of Aquatic Life~~II~~HHF = Human Health Protection—Fish Consumption~~III~~DWS = Drinking Water Supply~~IV~~ = Irrigation~~V~~ = Livestock, Wildlife Watering~~VI~~ = Whole Body Contact Recreation~~VII~~GRW = Groundwater

Pollutant ($\mu\text{g/l}$)	I	II HHF	III DWS	IV	V	VI	VII GRW
Persistent, Mammade Anthropogenic Carcinogens(+) $\mu\text{g/l}$							
Acrylonitrile		.65	.058				.058
Hexachlorobenzene		.00074	1				1
Bis (2-chloroethyl) ether		1.4	.03				.03
Bis (chloromethyl) ether		.07 <u>.000078</u>	0.000163				0.000163
Hexachloroethane		8.7	1.9				1.9
3,3'-dichlorobenzidine		0.08	.04				.04
Hexachlorobutadiene		50	.45				.45
n-nitrosodimethylamine		8	.0007				.0007

(+) Some of these values are below current detection limits; analyses will be determined by the 17th edition of *Standard Methods* or the most current methods approved by the Environmental Protection Agency.

Pollutant (g/l)	I	II HHF	III DWS	IV	V	VI	VII GRW
Volatile Organics							
Chlorobenzene		21,000	100				100
Carbon Tetrachloride		5	5				5
Trihalomethanes			+0080				+0080
Bromoform		365 <u>360</u>	4.3				4.3
Chlorodibromomethane		35 <u>34</u>	0.41				0.41
Dichlorobromomethane		46	0.56				0.56
Chloroform		470	5.7				5.7
Methyl Bromide		4000	48				48
Methyl Chloride		470	5				5
Methylene Chloride		1600	54.7				54.7
Bromoform		365					
Chlorodibromomethane		35					
Dichlorobromomethane		46					
Dichlorodifluoromethane		570,000					
Trichlorofluoromethane		860,000					
1,2-dichloroethane		99	5				5
1,1,2,2-tetrachloroethane		11	.17				.17
1,1-dichloroethylene		3.2	7				7
1,2-trans-dichloroethylene		140,000	100				100
1,2-cis-dichloroethylene			70				70
Trichloroethylene		80	5				5
Tetrachloroethylene		98.85	50.8				50.8
Benzene		71	5				5
Toluene		200,000	1000				1000
Xylenes (total)			10,000				10,000
Vinyl chloride		525	2				2
Styrene			100				100
1,2-dichloropropane		39	+000.52				+000.52
Pollutant (fibers/l)	I	II	III DWS	IV	V	VI	VII
Asbestos				7,000,000			

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Pollutant (µg/l)	<u>I</u>	<u>II</u> HHF	<u>III</u> DWS	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u> GRW
Polynuclear Aromatic Hydrocarbons							
Anthracene		110,000	9600				9600
Fluoranthene		370	300				300
Fluorene		14,000	1300				1300
Pyrene		11,000	960				960
Benzo(a)pyrene		.049	0.2				0.2
other polynuclear aromatic hydrocarbons*		.049	.0044				.0044
Acenaphthene		2700	1200		1200		

*This concentration is allowed for each of the following PAHs: benzo(a)anthracene, 3,4-benzofluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene and benzo(k)fluoranthene. Higher values may be allowed if natural background concentrations exceed these values.

Pollutant (µg/l)	<u>I</u>	<u>II</u> HHF	<u>III</u> DWS	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u> GRW
Phthalate Esters							
Bis(2-ethylhexyl) phthalate		5.9	6				6
Butylbenzyl phthalate		5200	3000				3000
Diethyl phthalate		120,000	23,000				23,000
Dimethyl phthalate		2,900,000	313,000				313,000
Di-n-butyl phthalate		12,000	2700				2700

Health Advisory Levels

Pollutant (µg/l)	<u>I</u>	<u>II</u>	<u>III</u> DWS	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u> GRW
Ametryn			60				60
Baygon			3				3
Bentazon			20				20
Bis-2-chloroisopropyl ether			300				300
Bromacil			90				90
Bromochloromethane			90				90
Bromomethane			10				10
Butylate			350				350
Carbaryl			700				700
Carboxin			700				700
Chloramben			100				100
o-chlorotoluene			100				100
p-chlorotoluene			100				100
Chlorpyrifos			20				20
DCPA (dacthal)			4000				4000
Diazinon			0.6				0.6
Dicamba			200				200
Diisopropyl methylphosphonate			600				600
Dimethyl methylphosphonate			100				100
1,3-dinitrobenzene			1				1
Diphenamid			200				200
Diphenylamine			200				200
Disulfoton			0.3				0.3
1,4-dithiane			80				80
Diuron			10				10

~~I = Protection of Aquatic Life~~~~II = Human Health Protection - Fish Consumption~~~~III-DWS = Drinking Water Supply~~~~IV = Irrigation~~~~V = Livestock, Wildlife Watering~~~~VI = Whole Body Contact Recreation~~~~VII-GRW = Groundwater~~**Health Advisory Levels (continued)**

Pollutant (µg/l)	I	II	III-DWS	IV	V	VI	VII-GRW
Fenamiphos			2				2
Fluometron			90				90
Fluorotrichloromethane			2000				2000
Fonofos			10				10
Hexazinone			200				200
Malathion			200				200
Maleic hydrazide			4000				4000
MCPA			10				10
Methyl parathion			2				2
Metolachlor			70				70
Metribuzin			100				100
Naphthalene			20				20
Nitroguanidine			700				700
p-nitrophenol			60				60
Paraquat			30				30
Pronamide			50				50
Propachlor			90				90
Propazine			10				10
Propham			100				100
2,4,5-T			70				70
Tebuthiuron			500				500
Terbacil			90				90
Terbufos			0.9				0.9
1,1,1,2-Tetrachloroethane			70				70
1,2,3-trichloropropane			40				40
Trifluralin			5				5
Trinitroglycerol			5				5
Trinitrotoluene			2				2

Table B
Chronic Criteria for Total Ammonia: Cold Water Fishery (mg/l)

Temp. °C	pH												
	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	2.4	2.4	2.4	2.4	2.4	2.4	2.1	1.5	0.9	0.6	0.4	0.2	0.2
6	2.3	2.3	2.3	2.3	2.3	2.3	2.0	1.4	0.9	0.6	0.4	0.2	0.2
8	2.3	2.3	2.3	2.3	2.3	2.3	2.0	1.4	0.9	0.6	0.4	0.2	0.2
10	2.2	2.2	2.2	2.2	2.2	2.3	1.9	1.4	0.9	0.6	0.4	0.2	0.2
12	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.3	0.9	0.6	0.4	0.2	0.2
14	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.3	0.9	0.6	0.4	0.2	0.2
16	2.8	2.8	2.8	2.8	2.8	2.8	2.4	1.7	1.1	0.7	0.5	0.3	0.2
18	2.4	2.4	2.4	2.4	2.4	2.5	2.1	1.5	1.0	0.6	0.4	0.3	0.2
20	2.1	2.1	2.1	2.1	2.1	2.1	1.8	1.3	0.8	0.6	0.4	0.2	0.2
22	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.1	0.7	0.5	0.3	0.2	0.2
24	1.6	1.6	1.6	1.6	1.6	1.6	1.4	1.0	0.6	0.4	0.3	0.2	0.1
26	1.4	1.4	1.4	1.4	1.4	1.4	1.2	0.9	0.6	0.4	0.3	0.2	0.1
28	1.2	1.2	1.2	1.2	1.2	1.2	1.1	0.8	0.5	0.3	0.2	0.2	0.1
30	1.0	1.0	1.0	1.0	1.1	1.1	0.9	0.7	0.4	0.3	0.2	0.1	0.1

NOTE: Values in this table are total ammonia concentration (HN_3). Typical analytical methods result in determinations of ammonia-nitrogen and thus must be multiplied by 1.2 prior to comparison with values in this table.

-Acute Criteria for Total Ammonia: Cold Water Fishery (mg/l)

Temp. °C	pH												
	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	32.1	29.7	26.6	22.8	18.6	14.4	10.7	7.5	4.8	3.0	2.0	1.3	0.8
6	31.3	29.0	26.0	22.3	18.2	14.1	10.4	7.4	4.7	3.0	1.9	1.3	0.8
8	30.7	28.4	25.4	21.8	17.8	13.8	10.2	7.2	4.6	3.0	1.9	1.2	0.8
10	30.1	27.8	24.9	21.4	17.5	13.6	10.0	7.1	4.5	2.9	1.9	1.2	0.8
12	29.5	27.4	24.5	21.0	17.2	13.3	9.9	7.0	4.5	2.9	1.9	1.2	0.8
14	29.1	27.0	24.2	20.7	16.9	13.2	9.7	6.9	4.4	2.9	1.9	1.2	0.8
16	28.7	26.6	23.8	20.5	16.7	13.0	9.6	6.9	4.4	2.9	1.9	1.3	0.9
18	28.4	26.3	23.6	20.3	16.6	12.9	9.6	6.8	4.4	2.9	1.9	1.3	0.9
20	28.2	26.1	23.4	20.1	16.4	12.8	9.5	6.8	4.4	2.9	1.9	1.3	0.9
22	24.4	22.6	20.2	17.4	14.2	11.1	8.3	5.9	3.8	2.5	1.7	1.2	0.8
24	21.1	19.6	17.6	15.1	12.4	9.6	7.2	5.2	3.4	2.2	1.5	1.0	0.8
26	18.3	17.0	15.2	13.1	10.8	8.4	6.3	4.5	2.9	2.0	1.3	0.9	0.7
28	16.0	14.8	13.3	11.4	9.4	7.3	5.5	4.0	2.6	1.7	1.2	0.8	0.6
30	13.9	12.9	11.6	10.0	8.2	6.4	4.8	3.5	2.3	1.5	1.1	0.8	0.6

Chronic Criteria for Total Ammonia: Limited Warm Water Fishery (mg/l)

Temp. °C	pH												
	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	3.9	3.9	3.9	3.9	3.9	3.9	3.4	2.4	1.5	1.0	0.6	0.4	0.3
6	3.8	3.8	3.8	3.8	3.8	3.9	3.3	2.3	1.5	0.9	0.6	0.4	0.3
8	3.8	3.8	3.8	3.8	3.8	3.8	3.2	2.3	1.5	0.9	0.6	0.4	0.3
10	3.7	3.7	3.7	3.7	3.7	3.7	3.2	2.3	1.4	0.9	0.6	0.4	0.3
12	3.6	3.6	3.6	3.6	3.6	3.6	3.1	2.2	1.4	0.9	0.6	0.4	0.3
14	3.6	3.6	3.6	3.6	3.6	3.6	3.1	2.2	1.4	0.9	0.6	0.4	0.3
16	3.5	3.5	3.5	3.5	3.5	3.6	3.0	2.2	1.4	0.9	0.6	0.4	0.3
18	3.5	3.5	3.5	3.5	3.5	3.5	3.0	2.2	1.4	0.9	0.6	0.4	0.3
20	3.4	3.4	3.5	3.5	3.5	3.5	3.0	2.1	1.4	0.9	0.6	0.4	0.3
22	3.0	3.0	3.0	3.0	3.0	3.0	2.6	1.9	1.2	0.8	0.5	0.4	0.3
24	2.6	2.6	2.6	2.6	2.6	2.6	2.3	1.6	1.1	0.7	0.5	0.3	0.2
26	2.2	2.2	2.3	2.3	2.3	2.3	2.0	1.4	0.9	0.6	0.4	0.3	0.2
28	2.0	2.0	2.0	2.0	2.0	2.0	1.7	1.3	0.8	0.5	0.4	2.7	0.2
30	1.7	1.7	1.7	1.7	1.7	1.8	1.5	1.1	0.7	0.5	0.3	0.2	0.2

Acute Criteria for Total Ammonia: Limited Warm Water Fishery (mg/l)

Temp.	pH												
°C	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	81.2	75.2	67.3	57.7	47.1	36.5	27.0	19.1	12.1	7.7	5.0	3.2	2.1
6	79.2	73.4	65.7	56.4	46.0	35.7	26.4	18.7	11.9	7.6	4.9	3.2	2.1
8	77.5	71.8	64.3	55.2	45.1	34.9	25.8	18.3	11.7	7.5	4.8	3.1	2.1
10	76.0	70.4	63.1	54.1	44.2	34.3	25.4	18.0	11.5	7.4	4.8	3.1	2.1
12	74.7	69.2	62.0	53.2	43.5	33.7	25.0	17.7	11.3	7.3	4.7	3.1	2.1
14	73.6	68.2	61.1	52.4	42.9	33.3	24.6	17.5	11.2	7.2	4.7	3.1	2.1
16	72.6	67.3	60.3	51.8	42.3	32.9	24.4	17.4	11.2	7.0	4.7	3.2	2.2
18	71.8	66.6	59.7	51.2	41.9	32.6	24.2	17.3	11.1	7.2	4.8	3.2	2.2
20	71.2	66.0	59.1	50.8	41.6	32.4	24.0	17.2	11.1	7.2	4.8	3.3	2.3
22	70.7	65.6	58.8	50.5	41.4	32.2	24.0	17.2	11.1	7.3	4.9	3.4	2.4
24	70.4	65.3	58.5	50.3	41.2	32.1	23.9	17.2	11.2	7.4	5.0	3.5	2.5
26	65.5	60.7	54.5	46.9	38.4	30.0	22.4	16.1	10.5	7.0	4.8	3.3	2.5
28	57.0	52.9	47.4	40.8	33.5	26.2	19.6	14.1	9.3	6.2	4.3	3.0	2.3
30	49.7	46.1	41.4	35.6	29.3	22.9	17.2	12.4	8.2	5.5	3.8	2.8	2.1

Chronic Criteria for Total Ammonia: General Warm Water Fishery (mg/l)

Temp.	pH												
°C	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	2.5	2.5	2.5	2.5	2.5	2.5	2.1	1.5	0.9	0.6	0.4	0.3	0.2
6	2.4	2.4	2.4	2.4	2.4	2.4	2.1	1.5	0.9	0.6	0.4	0.2	0.2
8	2.3	2.3	2.3	2.3	2.3	2.4	2.0	1.4	0.9	0.6	0.4	0.2	0.2
10	2.3	2.3	2.3	2.3	2.3	2.3	2.0	1.4	0.9	0.6	0.4	0.2	0.2
12	2.3	2.3	2.3	2.3	2.3	2.3	2.0	1.4	0.9	0.6	0.4	0.2	0.2
14	2.2	2.2	2.2	2.2	2.2	2.2	2.0	1.4	0.9	0.6	0.4	0.2	0.2
16	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.4	0.9	0.6	0.4	0.2	0.2
18	2.2	2.2	2.2	2.2	2.2	2.2	1.9	1.3	0.9	0.6	0.4	0.3	0.2
20	2.1	2.2	2.2	2.2	2.2	2.2	1.9	1.3	0.9	0.6	0.4	0.3	0.2
22	1.9	1.9	1.9	1.9	1.9	1.9	1.6	1.2	0.8	0.5	0.3	0.2	0.2
24	1.6	1.6	1.6	1.6	1.6	1.6	1.4	1.0	0.7	0.4	0.3	0.2	0.1
26	1.4	1.4	1.4	1.4	1.4	1.4	1.2	0.9	0.6	0.4	0.3	0.2	0.1
28	1.2	1.2	1.2	1.2	1.2	1.2	1.1	0.8	0.5	0.3	0.2	0.2	0.1
30	1.1	1.1	1.1	1.1	1.1	1.1	0.9	0.7	0.5	0.3	0.2	0.2	0.1

Acute Criteria for Total Ammonia: General Warm Water Fishery (mg/l)

Temp.	pH												
°C	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
4	50.6	46.9	42.0	36.0	29.4	22.8	16.8	11.9	7.6	4.8	3.1	2.0	1.3
6	49.4	45.8	41.0	35.2	28.7	22.3	16.4	11.6	7.4	4.7	3.0	2.0	1.3
8	48.3	44.8	40.1	34.4	28.1	21.8	16.1	11.4	7.3	4.7	3.0	2.0	1.3
10	47.4	44.0	39.3	33.7	27.6	21.4	15.8	11.2	7.2	4.6	3.0	2.0	1.3
12	46.6	43.2	38.7	33.2	27.1	26.0	15.6	11.1	7.1	4.6	3.0	2.0	1.3
14	45.9	42.5	38.1	32.7	26.7	20.8	15.4	10.9	7.0	4.5	3.0	2.0	1.3
16	45.3	42.0	37.6	32.3	26.4	20.5	15.2	10.8	7.0	4.5	3.0	2.0	1.4
18	44.8	41.5	37.2	32.0	26.1	20.3	15.1	10.8	7.0	4.5	3.0	2.0	1.4
20	44.4	41.2	36.9	31.7	25.9	20.2	15.0	10.7	6.9	4.5	3.0	2.0	1.4
22	44.1	40.9	36.6	31.5	25.8	20.1	14.9	10.7	6.9	4.6	3.0	2.1	1.5
24	43.9	40.7	36.5	31.4	25.7	20.0	14.9	10.7	7.0	4.6	3.1	2.2	1.6
26	40.8	37.9	34.0	29.0	24.0	18.7	14.0	10.0	6.6	4.4	3.0	2.1	1.5
28	35.5	33.0	29.6	25.5	20.9	16.3	12.2	8.8	5.8	3.9	2.7	1.9	1.4
30	31.0	28.7	25.8	22.2	18.3	14.3	10.7	7.8	5.1	3.4	2.4	1.7	1.3

Table B1. Acute Criteria for Total Ammonia Nitrogen (mg N/L)

<u>pH</u>	<u>Cold-Water Fisheries</u> ₍₁₎	<u>Cool & Warm-Water Fisheries</u> ₍₂₎
<u>6.5</u>	<u>32.6</u>	<u>48.8</u>
<u>6.6</u>	<u>31.3</u>	<u>46.8</u>
<u>6.7</u>	<u>29.8</u>	<u>44.6</u>
<u>6.8</u>	<u>28.1</u>	<u>42.0</u>
<u>6.9</u>	<u>26.2</u>	<u>39.1</u>
<u>7.0</u>	<u>24.1</u>	<u>36.1</u>
<u>7.1</u>	<u>22.0</u>	<u>32.8</u>
<u>7.2</u>	<u>19.7</u>	<u>29.5</u>
<u>7.3</u>	<u>17.5</u>	<u>26.2</u>
<u>7.4</u>	<u>15.4</u>	<u>23.0</u>
<u>7.5</u>	<u>13.3</u>	<u>19.9</u>
<u>7.6</u>	<u>11.4</u>	<u>17.0</u>
<u>7.7</u>	<u>9.6</u>	<u>14.4</u>
<u>7.8</u>	<u>8.1</u>	<u>12.1</u>
<u>7.9</u>	<u>6.7</u>	<u>10.1</u>
<u>8.0</u>	<u>5.6</u>	<u>8.4</u>
<u>8.1</u>	<u>4.6</u>	<u>6.9</u>
<u>8.2</u>	<u>3.8</u>	<u>5.7</u>
<u>8.3</u>	<u>3.1</u>	<u>4.7</u>
<u>8.4</u>	<u>2.5</u>	<u>3.8</u>
<u>8.5</u>	<u>2.1</u>	<u>3.2</u>
<u>8.6</u>	<u>1.7</u>	<u>2.6</u>
<u>8.7</u>	<u>1.4</u>	<u>2.2</u>
<u>8.8</u>	<u>1.2</u>	<u>1.8</u>
<u>8.9</u>	<u>1.0</u>	<u>1.5</u>
<u>9.0</u>	<u>0.8</u>	<u>1.3</u>

Table B2. Chronic Criteria for Total Ammonia Nitrogen (mg N/L): Early Life Stages absent₍₃₎₍₄₎

<u>pH</u>	Temperature (°C)																
	0-7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30
<u>6.5</u>	<u>10.8</u>	<u>10.1</u>	<u>9.5</u>	<u>8.9</u>	<u>8.3</u>	<u>7.8</u>	<u>7.3</u>	<u>6.8</u>	<u>6.4</u>	<u>6.0</u>	<u>5.3</u>	<u>4.6</u>	<u>4.1</u>	<u>3.6</u>	<u>3.1</u>	<u>2.8</u>	<u>2.4</u>
<u>6.6</u>	<u>10.7</u>	<u>9.9</u>	<u>9.3</u>	<u>8.7</u>	<u>8.2</u>	<u>7.7</u>	<u>7.2</u>	<u>6.7</u>	<u>6.3</u>	<u>5.9</u>	<u>5.2</u>	<u>4.6</u>	<u>4.0</u>	<u>3.5</u>	<u>3.1</u>	<u>2.7</u>	<u>2.4</u>
<u>6.7</u>	<u>10.5</u>	<u>9.8</u>	<u>9.2</u>	<u>8.6</u>	<u>8.0</u>	<u>7.5</u>	<u>7.1</u>	<u>6.6</u>	<u>6.2</u>	<u>5.8</u>	<u>5.1</u>	<u>4.5</u>	<u>3.9</u>	<u>3.5</u>	<u>3.0</u>	<u>2.7</u>	<u>2.3</u>
<u>6.8</u>	<u>10.2</u>	<u>9.5</u>	<u>8.9</u>	<u>8.4</u>	<u>7.9</u>	<u>7.4</u>	<u>6.9</u>	<u>6.5</u>	<u>6.1</u>	<u>5.7</u>	<u>5.0</u>	<u>4.4</u>	<u>3.8</u>	<u>3.4</u>	<u>3.0</u>	<u>2.6</u>	<u>2.3</u>
<u>6.9</u>	<u>9.9</u>	<u>9.3</u>	<u>8.7</u>	<u>8.1</u>	<u>7.6</u>	<u>7.2</u>	<u>6.7</u>	<u>6.3</u>	<u>5.9</u>	<u>5.5</u>	<u>4.8</u>	<u>4.3</u>	<u>3.7</u>	<u>3.3</u>	<u>2.9</u>	<u>2.5</u>	<u>2.2</u>
<u>7.0</u>	<u>9.6</u>	<u>9.0</u>	<u>8.4</u>	<u>7.9</u>	<u>7.4</u>	<u>6.9</u>	<u>6.5</u>	<u>6.1</u>	<u>5.7</u>	<u>5.3</u>	<u>4.7</u>	<u>4.1</u>	<u>3.6</u>	<u>3.2</u>	<u>2.8</u>	<u>2.4</u>	<u>2.1</u>
<u>7.1</u>	<u>9.2</u>	<u>8.6</u>	<u>8.0</u>	<u>7.5</u>	<u>7.1</u>	<u>6.6</u>	<u>6.2</u>	<u>5.8</u>	<u>5.4</u>	<u>5.1</u>	<u>4.5</u>	<u>3.9</u>	<u>3.5</u>	<u>3.0</u>	<u>2.7</u>	<u>2.3</u>	<u>2.0</u>
<u>7.2</u>	<u>8.7</u>	<u>8.2</u>	<u>7.6</u>	<u>7.2</u>	<u>6.7</u>	<u>6.3</u>	<u>5.9</u>	<u>5.5</u>	<u>5.2</u>	<u>4.9</u>	<u>4.3</u>	<u>3.7</u>	<u>3.3</u>	<u>2.9</u>	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>
<u>7.3</u>	<u>8.2</u>	<u>7.7</u>	<u>7.2</u>	<u>6.7</u>	<u>6.3</u>	<u>5.9</u>	<u>5.6</u>	<u>5.2</u>	<u>4.9</u>	<u>4.6</u>	<u>4.0</u>	<u>3.5</u>	<u>3.1</u>	<u>2.7</u>	<u>2.4</u>	<u>2.1</u>	<u>1.8</u>
<u>7.4</u>	<u>7.6</u>	<u>7.2</u>	<u>6.7</u>	<u>6.3</u>	<u>5.9</u>	<u>5.5</u>	<u>5.2</u>	<u>4.8</u>	<u>4.5</u>	<u>4.3</u>	<u>3.7</u>	<u>3.3</u>	<u>2.9</u>	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>	<u>1.7</u>
<u>7.5</u>	<u>7.0</u>	<u>6.6</u>	<u>6.2</u>	<u>5.8</u>	<u>5.4</u>	<u>5.1</u>	<u>4.8</u>	<u>4.5</u>	<u>4.2</u>	<u>3.9</u>	<u>3.4</u>	<u>3.0</u>	<u>2.6</u>	<u>2.3</u>	<u>2.0</u>	<u>1.8</u>	<u>1.6</u>
<u>7.6</u>	<u>6.4</u>	<u>6.0</u>	<u>5.6</u>	<u>5.3</u>	<u>5.0</u>	<u>4.6</u>	<u>4.3</u>	<u>4.1</u>	<u>3.8</u>	<u>3.6</u>	<u>3.1</u>	<u>2.7</u>	<u>2.4</u>	<u>2.1</u>	<u>1.9</u>	<u>1.6</u>	<u>1.4</u>
<u>7.7</u>	<u>5.8</u>	<u>5.4</u>	<u>5.1</u>	<u>4.7</u>	<u>4.0</u>	<u>4.2</u>	<u>3.9</u>	<u>3.7</u>	<u>3.4</u>	<u>3.2</u>	<u>2.8</u>	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>	<u>1.7</u>	<u>1.5</u>	<u>1.3</u>
<u>7.8</u>	<u>5.1</u>	<u>4.8</u>	<u>4.5</u>	<u>4.2</u>	<u>4.4</u>	<u>3.7</u>	<u>3.5</u>	<u>3.2</u>	<u>3.0</u>	<u>2.8</u>	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>	<u>1.7</u>	<u>1.5</u>	<u>1.3</u>	<u>1.1</u>
<u>7.9</u>	<u>4.5</u>	<u>4.2</u>	<u>3.9</u>	<u>3.7</u>	<u>3.5</u>	<u>3.2</u>	<u>3.1</u>	<u>2.8</u>	<u>2.7</u>	<u>2.5</u>	<u>2.2</u>	<u>1.9</u>	<u>1.7</u>	<u>1.5</u>	<u>1.3</u>	<u>1.1</u>	<u>1.0</u>
<u>8.0</u>	<u>3.9</u>	<u>3.7</u>	<u>3.4</u>	<u>3.2</u>	<u>3.0</u>	<u>2.8</u>	<u>2.6</u>	<u>2.5</u>	<u>2.3</u>	<u>2.2</u>	<u>1.9</u>	<u>1.7</u>	<u>1.5</u>	<u>1.3</u>	<u>1.1</u>	<u>1.0</u>	<u>0.8</u>
<u>8.1</u>	<u>3.4</u>	<u>3.1</u>	<u>2.9</u>	<u>2.8</u>	<u>2.6</u>	<u>2.4</u>	<u>2.3</u>	<u>2.1</u>	<u>2.0</u>	<u>1.9</u>	<u>1.6</u>	<u>1.4</u>	<u>1.2</u>	<u>1.1</u>	<u>1.0</u>	<u>0.8</u>	<u>0.7</u>
<u>8.2</u>	<u>2.9</u>	<u>2.7</u>	<u>2.5</u>	<u>2.4</u>	<u>2.2</u>	<u>2.1</u>	<u>1.9</u>	<u>1.8</u>	<u>1.7</u>	<u>1.6</u>	<u>1.4</u>	<u>1.2</u>	<u>1.1</u>	<u>0.9</u>	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>
<u>8.3</u>	<u>2.4</u>	<u>2.3</u>	<u>2.1</u>	<u>2.0</u>	<u>1.9</u>	<u>1.7</u>	<u>1.6</u>	<u>1.5</u>	<u>1.4</u>	<u>1.3</u>	<u>1.2</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>	<u>0.5</u>
<u>8.4</u>	<u>2.0</u>	<u>1.9</u>	<u>1.8</u>	<u>1.7</u>	<u>1.6</u>	<u>1.5</u>	<u>1.4</u>	<u>1.3</u>	<u>1.2</u>	<u>1.1</u>	<u>1.0</u>	<u>0.9</u>	<u>0.7</u>	<u>0.7</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>
<u>8.5</u>	<u>1.7</u>	<u>1.6</u>	<u>1.5</u>	<u>1.4</u>	<u>1.3</u>	<u>1.2</u>	<u>1.2</u>	<u>1.1</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>
<u>8.6</u>	<u>1.4</u>	<u>1.4</u>	<u>1.3</u>	<u>1.2</u>	<u>1.1</u>	<u>1.0</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.8</u>	<u>0.7</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>
<u>8.7</u>	<u>1.2</u>	<u>1.1</u>	<u>1.1</u>	<u>1.0</u>	<u>0.9</u>	<u>0.9</u>	<u>0.8</u>	<u>0.8</u>	<u>0.7</u>	<u>0.7</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>	<u>0.2</u>
<u>8.8</u>	<u>1.0</u>	<u>1.0</u>	<u>0.9</u>	<u>0.8</u>	<u>0.8</u>	<u>0.7</u>	<u>0.7</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>	<u>0.2</u>	<u>0.2</u>
<u>8.9</u>	<u>0.9</u>	<u>0.8</u>	<u>0.8</u>	<u>0.7</u>	<u>0.7</u>	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>
<u>9.0</u>	<u>0.7</u>	<u>0.7</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>0.4</u>	<u>0.4</u>	<u>0.3</u>	<u>0.3</u>	<u>0.3</u>	<u>0.2</u>	<u>0.2</u>	<u>0.2</u>	<u>0.1</u>

Table B3. Chronic Criteria for Total Ammonia Nitrogen (mg N/L): Early Life Stages present (5)

pH	Temperature (°C)									
	0	14	16	18	20	22	24	26	28	30
6.5	6.6	6.6	6.0	5.3	4.6	4.1	3.6	3.1	2.8	2.4
6.6	6.5	6.5	5.9	5.2	4.6	4.0	3.5	3.1	2.7	2.4
6.7	6.4	6.4	5.8	5.1	4.5	3.9	3.5	3.0	2.7	2.3
6.8	6.2	6.2	5.7	5.0	4.4	3.8	3.4	3.0	2.6	2.3
6.9	6.1	6.1	5.5	4.8	4.3	3.7	3.3	2.9	2.5	2.2
7.0	5.9	5.9	5.3	4.7	4.1	3.6	3.2	2.8	2.4	2.1
7.1	5.6	5.6	5.1	4.5	3.9	3.5	3.0	2.7	2.3	2.0
7.2	5.3	5.3	4.9	4.3	3.7	3.3	2.9	2.5	2.2	1.9
7.3	5.0	5.0	4.6	4.0	3.5	3.1	2.7	2.4	2.1	1.8
7.4	4.7	4.7	4.3	3.7	3.3	2.9	2.5	2.2	1.9	1.7
7.5	4.3	4.3	3.9	3.4	3.0	2.6	2.3	2.0	1.8	1.6
7.6	3.9	3.9	3.6	3.1	2.7	2.4	2.1	1.9	1.6	1.4
7.7	3.5	3.5	3.2	2.8	2.5	2.2	1.9	1.7	1.5	1.3
7.8	3.1	3.1	2.8	2.5	2.2	1.9	1.7	1.5	1.3	1.1
7.9	2.8	2.8	2.5	2.2	1.9	1.7	1.5	1.3	1.1	1.0
8.0	2.4	2.4	2.2	1.9	1.7	1.5	1.3	1.1	1.0	0.8
8.1	2.1	2.1	1.9	1.6	1.4	1.2	1.1	1.0	0.8	0.7
8.2	1.7	1.7	1.6	1.4	1.2	1.1	0.9	0.8	0.7	0.6
8.3	1.5	1.5	1.3	1.2	1.0	0.9	0.8	0.7	0.6	0.5
8.4	1.2	1.2	1.1	1.0	0.9	0.7	0.7	0.6	0.5	0.4
8.5	1.0	1.0	0.9	0.8	0.7	0.6	0.5	0.5	0.4	0.4
8.6	0.9	0.9	0.8	0.7	0.6	0.5	0.4	0.4	0.3	0.3
8.7	0.7	0.7	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.2
8.8	0.6	0.6	0.6	0.5	0.4	0.4	0.3	0.3	0.2	0.2
8.9	0.5	0.5	0.5	0.4	0.3	0.3	0.2	0.2	0.2	0.2
9.0	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1

(1) *Salmonids present:* $CMC = [0.275 / (1+10^{7.204-pH})] + [39.0 / (1+10^{pH-7.204})]$

(2) *Salmonids absent:* $CMC = [0.411 / (1+10^{7.204-pH})] + [58.4 / (1+10^{pH-7.204})]$

(3) Without sufficient and reliable data, it is assumed that Early Life Stages are present and must be protected at all times of the year.

(4) Early Life Stages absent

$$CCC = [0.0577 / (1+10^{7.688-pH})] + [2.487 / (1+10^{pH-7.688})] * 1.45 * 10^{0.028 * (25 - MAX (T , 7))}$$

(5) Early Life Stages present

$$CCC = [0.0577 / (1+10^{7.688-pH})] + [2.487 / (1+10^{pH-7.688})] * MIN(2.85, 1.45 * 10^{0.028 * (25 - T)})$$

Table C
Streams-Waters Designated for Cold-Water Sport-Fishery

Waterbody	Miles/Acres	From	To	County(ies)
Barren Fork	2	Mouth	20,31N,4W	Shannon
Bee Creek	1	Mouth	Hwy. 65	Taney
Bender Creek	0.7	Mouth	10,31N,9W	Texas
Bennett Springs Creek	2	Mouth	Bennett Springs	Laclede
Blue Springs Creek	4	Mouth	2,39N,3W	Crawford
Bryant Creek	1	3,23N,12W	34,24N,12W	Ozark
Bryant Creek	6	19,27N,14W	8,27N,15W	Douglas
Buffalo Creek	10	State line	5,23N,33W	McDonald
Bull Creek	5	Mouth	34,24N,21W	Taney
Bull Shoals Lake	9000	21/34, 20N, 15W	---	Ozark
Capps Creek	4	Mouth	17,25N,28W	Newton-Barry
Cedar Creek	1	21,26N,32W	28,26N,32W	Newton
Center Creek	3	24,27N,29W	17,27N,28W	Lawrence
Chesapeake Creek	3	Mouth	29,28N,25W	Lawrence
Crane Creek	15	8,25N,23W	24,26N,25W	Stone-Lawrence
Current River	19	24,31N,6W	Montauk Spring	Shannon-Dent
Dogwood Creek	2.3	Mouth	State line	Stone
Dry Creek	4	Mouth	14,37N,3W	Crawford
Eleven Point River	33.5	State line	36,25N,4W	Oregon
Flat Creek	3	9,23N,27W	21,23N,27W	Barry
Goose Creek	4	Mouth	10,28N,25W	Lawrence
Greer Spring Branch	1	Mouth	36,25N,4W	Oregon
Hickory Creek	4.5	13,25N,31W	28,25N,31W	Newton
Hobbs Hollow	2.7	Mouth	State line	Stone
Horse Creek	2.2	Mouth	23,35N,8W	Dent
Hunter Creek	5	22,26N,15W	20,26N,14W	Douglas
Hurricane Creek	1.5	Mouth	30,24N,12W	Ozark
Hurricane Creek	3.2	Mouth	22,25N,3W	Oregon
Indian Creek	1.4	Mouth	17,21N,23W	Stone
Indian Creek	20	Mouth	36,39N,01W	Franklin-Washinton
Johnson Creek	3	Mouth	36,29N,26W	Lawrence
Joyce Creek	1	17,24N,28W	16,24N,28W	Barry
L. Flat Creek	3.5	Mouth	25,25N,27W	Barry
L. Piney Creek	15	25,37N,9W	4,35N,8W	Phelps
L. Piney Creek	<u>19.4</u>	<u>25,37N,9W</u> <u>04,35N,08W</u>	<u>31,37N,08W</u> <u>21,35N,08W</u>	Phelps
L. Sinking Creek	2.2	Mouth	33,32N,4W	Dent
Lyman Creek	1	Mouth	30,40N,3W	Crawford
Maramec Spring Branch	1	Mouth	1,37N,6W	Phelps
Meramec River	10	22,38N,5W	Hwy. 8	Crawford
Mill Creek	1.5	Mouth	9,36N,18W	Dallas
Mill Creek	5	29,37N,9W	Yelton Spring	Phelps
Mill Creek	1.5	Mouth	11,40N,8W	Maries
N. Fork White River	<u>13.523</u>	<u>30</u> ,22N,12W	<u>28,24N,11W</u> <u>34,25N,11W</u>	Ozark
Niangua River	6	11,35N,18W	Bennett Sp. Creek	Dallas
Roaring River	7	Mouth	34,22N,27W	Barry
Roark Creek	3	Mouth	36,23N,22W	Taney
Roubidoux Creek	4	Mouth	25,36N,12W	Pulaski
S. Indian Creek	<u>3.49</u>	<u>30</u> 24,24N, <u>30</u> W <u>31</u> W	<u>0</u> 1,23N,30W	Newton-McDonald
Schafer Spring Creek	2	Mouth	20,32N,6W	Dent
Shoal Creek	1	Mouth	18,41N,17W	Morgan
Shoal Creek	7	09,25N,29W	16,22N,21W	Newton
Spring Branch	1	Mouth	18,41N,17W	Morgan
Spring Creek	6.5	Mouth	31,35N,9W	Phelps
Spring Creek	2.5	Mouth	4,41N,2W	Franklin
Spring Creek	5.5	Mouth	12,26N,24W	Stone
Spring Creek	<u>36</u>	Mouth	<u>50</u> 6,24N,13W	Douglas-Ozark
Spring Creek	2.5	Mouth	26,25N,11W	Douglas
Spring Creek	5	Mouth	14,23N,11W	Ozark
Spring Creek	4	Mouth	30,25N,4W	Oregon
Spring River	11.2	13,27N,27W	20,26N,26W	Lawrence
Stone Mill Spring Branch	0.2	Mouth	Spring	Pulaski
Taneycomo Lake	1730 ac.	8,23N,20W	—	Taney
Terrell Creek	2	Mouth	2,27N,23W	Christian
Tory Creek	2.5	Mouth	27,26N,22W	Stone-Christian
Turkey Creek	2	Mouth	16,22N,21W	Taney
Turkey Creek	1	Mouth	17,23N,15W	Ozark
Turnback Creek	14	35,30N,26W	24,28N,25W	Dade-Lawrence
Warm Fork Spring River	3	6,22N,5W	30,23N,5W	Oregon
Whittenburg Creek	2.5	Mouth	Hwy. 8	Crawford
Williams Creek	1	Mouth	28,28N,27W	Lawrence
Woods Fork Bull Creek	1	15,25N,21W	15,25N,21W	Christian
Yadkin Creek	3	Mouth	9,37N,4W	Crawford
Yankee Branch	1	Mouth	10,36N,4W	Crawford

Table D
Outstanding National Resource Waters

<u>Stream</u>	<u>Water body</u>	<u>Location</u>	<u>County(ies)</u>
Current River		Headwaters to Northern Ripley Co. Line Sec. 22, 32N, 07W to Sec. 15, 25N, 01E	Dent to Ripley
Jacks Fork River		Headwaters to Mouth Sec. 29, 28N, 05W to Sec 9/15, 29N, 03W	Texas to Shannon
Eleven Point River		Headwaters to Hwy. 142 Sec. 32, 25N, 05W to Sec. 21, 22N, 02W	Oregon

Table E
Outstanding State Resource Waters

<u>Waterbody</u>	<u>Miles/Acres</u>	<u>Location</u>	<u>County(ies)</u>
Baker Branch	4 mi.	Taberville Prairie	St. Clair
Bass Creek	1 mi.	in Three Creek Conservation Area	Boone
Big Buffalo Creek	1.5 mi.	Big Buffalo Creek Conservation Area	Benton-Morgan
Big Creek	5.3 mi.	Sam A. Baker State Park	Wayne
Big Sugar Creek	7 mi.	Cuivre River State Park	Lincoln
Big Lake Marsh	150 ac.	Big Lake State Park	Holt
Blue Springs Creek	4 mi. <i>(1.5 mi. adjacent to owned lands)</i>	Blue Spring Creek Conservation Area	Crawford
Boone Femme Creek	2 mi.	Three Creeks Conservation Area	Boone
Brush Creek	0.7 mi.	Bonanza Conservation Area	Caldwell
Bryant Creek	1.5 mi.	Bryant Creek Natural Area in Rippee Conservation Area	Ozark/Douglas
Bull Creek	8.0 mi.	Mark Twain National Forest Sec. 24, 25N, 21W to Sec. 22, 26N, 20W	Christian
Cathedral Cave Branch	5 mi.	Onondaga Cave State Park	Crawford
Chariton River	9.8 mi.	Rebels Cove Conservation Area	Putnam-Schuyler
Chloe Lowry Marsh	40 ac.	Chloe Lowry Marsh Conservation Area	Mercer
Coakley Hollow	1.5 mi.	Lake of the Ozarks State Park	Camden
Coonville Creek	2 mi.	St. Francois State Park	St. Francois
Courtois Creek	12 mi.	Mouth to Hwy. 8	Crawford
Crabapple Creek	1.0 mi.	Bonanza Conservation Area	Caldwell
Devils Ice Box Cave Branch	1.5 mi.	Rock Bridge State Park	Boone
East Fork Black River	3 mi.	Johnson's Shut-Ins State Park	Reynolds
First Nicholson Creek (East Drywood Creek)	2 mi.	Prairie State Park	Barton
Gan's Creek	3 mi.	Rock Bridge State Park	Boone
Huzzah Creek	6 mi.	Mouth to Hwy. 8	Crawford
Indian Creek	17.5 mi.	Mark Twain National Forest	Douglas-Howell
Ketchum Hollow	1.5 mi.	Roaring River State Park	Barry
Little Piney Creek	25 mi.	Mouth to 21,35N,08W	Phelps
Little Black River	3 mi.	Mud Puppy Natural History Area S22,T24N,R3E to S25,T24N,R3E	Ripley Caldwell
Log Creek	0.4 mi.	Bonanza Conservation Area	Crawford/Franklin
Meramec River	8 mi.	Adjacent to Meramac State Park	Crawford
Meramec River	3 mi.	Adjacent to Onondaga and Huzzah State Forest	Phelps
Mill Creek	5 mi.	Mark Twain National Forest	Ozark
N. Fork White River	5.5 mi.	Mark Twain National Forest	Douglas-Howell
Noblett Creek	5 mi.	Above Noblett Lake, Mark Twain National Forest	Crawford
Onondaga Cave Branch	0.6 mi.	Onondaga Cave State Park	Ste. Genevieve
Pickle Creek	3 mi.	Hawn State Park	Ripley
S. Prong L. Black River	2 mi.	In Little Black Conservation Area	Caldwell
Shoal Creek	0.5 mi.	Bonanza Conservation Area	Douglas
Spring Creek	17 mi.	Mark Twain National Forest	Phelps
Spring Creek	6.5 mi.	Mark Twain National Forest	Reynolds-Iron
Taum Sauk Creek	5.5 mi.	Johnson's Shut-Ins State Park Addition S23,T33N,R2E to S5,T33N,R3E	Boone
Turkey Creek	4.6 mi.	In Three Creeks Conservation Area	

Van Meter Marsh
Whetstone Creek

80 ac.
5.1 mi.

Van Meter State Park
Whetsone Creek Conservation Area

Saline
Callaway

Table F
Metropolitan No-Discharge Streams

St. Louis Area	
<u>Stream</u>	<u>Location</u>
Gravois Creek	Entire length
Creve Coeur Creek	Creve Coeur Lake and stream above lake
Fee Fee Creek	Entire length
Coldwater Creek	Entire length
Dardenne Creek	Route DD—I-70 Highway—St. Charles County
Belleau Creek	Headwaters—0.1 mi. west of east edge of S22,T47N,R3E
Fishpot Creek	Entire length
Grand Glaize Creek	Entire length

Kansas City Area	
<u>Stream</u>	<u>Location</u>
Indian Creek	Kansas state line to confluence with Blue River
Blue River	Kansas state line to 59th Street, Kansas City
Blue River (except combined sewer overflow from Brush Creek)	59th Street to Guinotte Dam
Little Blue River	Entire length

Springfield Area	
<u>Stream</u>	<u>Location</u>
Pearson Creek	Entire length

Table I
Biocriteria Reference Locations

<u>STREAMS</u>	<u>COUNTIES</u>	<u>LOCATIONS</u>
White Cloud Creek	Nodaway	See 18 & 19, T62N, R35W
Honey Creek	Nodaway	See 13 & 24, T65N, R34W
East Fork Grand River	Worth	N1/2, See 32, T66N, R30W
Grindstone Creek	DeKalb	NW1/4, See 2, T58N, R30W
Long Branch Platte River	Nodaway	E1/2, See 19, T62N, R34W
West Fork Big Creek	Harrison	SW1/4, See 22, T64N, R28W
Marrowbone Creek	Davies	See, Line 5 & 8, T58N, R27W
No Creek	Livingston	T59N, R24W & 23W
West Locust Creek	Sullivan	S1/2, See 14, T61N, R21W
Spring Creek	Adair	NE, S30, T63N, R16W
East Fork Crooked River	Ray	E1/2, See 27, T53N, R27W
Petite Saline Creek	Cooper	NE1/4, See 13, T48N, R16W
Burris Fork	Moniteau	NW1/4, See 5, T43N, R15W
Little Dry Wood Creek	Vernon	NE, S30, T35N, R31W
Cedar Creek	Cedar	N1/2, See 9, T34N, R27W
Pomme de Terre River	Polk	See Line 21 & 22, T32N, R21W
Deer Creek	Benton	NE1/4, See 31, T40N, R20W
Little Niangua River	Hickory	NW1/4, See 2, T37N, R20W
Little Maries River	Maries	W1/2, See 34, T41N, R10W
Big Sugar Creek	McDonald	N1/2, See 21, T22N, R30W
Bull Creek	Taney	E1/2, See 36, T25N, R21W
Spring Creek	Douglas	SW1/4, See 23, T25N, R11W
North Fork River	Douglas	See 30, T26N, R11W
Jacks Fork River	Shannon	See Line 31 & 32, T28N, R6W
Sinking Creek	Shannon	See 28, T31N, R4W
Big Creek	Shannon	NW1/4, See 7, T30N, R3W
Little Black River	Ripley	N1/2, See 25, T24N, R3E
West Piney Creek	Texas	NW1/4, See 20, T30N, R10W
Little Piney Creek	Phelps	SW1/4, See 32, T36N, R8W
Meramec River	Crawford	SW1/4, See 35, T36N, R5W
Huzzah Creek	Crawford	S1/2, See 20, T36N, R2W
Marble Creek	Madison	S1/2, See 18, T32N, R5E
East Fork Black River	Reynolds	W1/2, See 16, T33N, R2E
Sinking Creek	Reynolds	NE1/4, See 20, T30N, R2E
Boeuf Creek	Franklin	W1/2, See 30, T44N, R3W
River Aux Vases	Ste. Genevieve	SE1/4, See 27, T37N, R8E
Saline Creek	Ste. Genevieve	W1/2, See 28, T36N, R9E
Apple Creek	Cape Girardeau/Perry	NW1/4, See 4, T33N, R11E
Little Whitewater River	Bollinger	N1/2, See 1, T32N, R9E
Middle Fabius River	Lewis	NE1/4, See 5, T61N, R8W
North River	Marion	E1/2, See 32, T58N, R7W
Loutre River	Montgomery	N1/2, See 28, T48N, R6W
Huffstetter Lateral Ditch	Stoddard	See Corner 17, 18, 19, 20, T24N, R11E
Ash Slough Ditch	New Madrid	TS, Line 24N & 25N, R13E
Maple Slough Ditch	Mississippi	TS, Line 24N & 25N, R15E

<u>STREAMS</u>	<u>COUNTIES</u>	<u>UPSTREAM LOCATION</u>				<u>DOWNSTREAM LOCATION</u>			
Apple Creek	Cape Girardeau/Perry	W 1/2	Sec. 29	T34N	R11E	NW	Sec. 3	T33N	R11E
[Ash Slough Ditch]	[New Madrid]					[TS]	[Line 24N & 25N]	[R13E]	
Reason: Lack of water due to irrigation withdrawal.									
Big Creek	Shannon	E 1/2	Sec. 12	T30N	R04W	N 1/2	Sec. 36	T30N	R04W
Big Sugar Creek	McDonald	SE	Sec. 1	T21N	R30W	NE	Sec. 21	T22N	R30W
Blair Creek	Shannon	SE	Sec. 25	T30N	R03W	NW	Sec. 18	T29N	R02W

<u>STREAMS</u>	<u>COUNTIES</u>	<u>UPSTREAM LOCATION</u>				<u>DOWNTSTREAM LOCATION</u>			
Boeuf Creek	Franklin	<u>SW</u>	<u>Sec. 36</u>	<u>T44N</u>	<u>R04W</u>	<u>NW</u>	<u>Sec. 30</u>	<u>T44N</u>	<u>R03W</u>
Bryant Creek	Douglas	<u>NW</u>	<u>Sec. 10</u>	<u>T25N</u>	<u>R14W</u>	<u>E 1/2</u>	<u>Sec. 15</u>	<u>T25N</u>	<u>R14W</u>
Bull Creek	Christian/Taney	<u>SE</u>	<u>Sec. 25</u>	<u>T25N</u>	<u>R21W</u>	<u>NE</u>	<u>Sec. 3</u>	<u>T24N</u>	<u>R21W</u>
Burris Fork	Moniteau	<u>NW</u>	<u>Sec. 6</u>	<u>T43N</u>	<u>R15W</u>	<u>NW</u>	<u>Sec. 28</u>	<u>T44N</u>	<u>R15W</u>
Castor River	Madison	<u>NW</u>	<u>Sec. 10</u>	<u>T33N</u>	<u>R08E</u>	<u>S 1/2</u>	<u>Sec. 16</u>	<u>T33N</u>	<u>R08E</u>
Cedar Creek	Cedar	<u>E 1/2</u>	<u>Sec. 29</u>	<u>T34N</u>	<u>R27W</u>	<u>N 1/2</u>	<u>Sec. 09</u>	<u>T34N</u>	<u>R27W</u>
Center Creek	Lawrence	<u>SE</u>	<u>Sec. 18</u>	<u>T27N</u>	<u>R28W</u>	<u>NE</u>	<u>Sec. 24</u>	<u>T27N</u>	<u>R29W</u>
Deer Creek	Benton	<u>SE</u>	<u>Sec. 31</u>	<u>T40N</u>	<u>R20W</u>	<u>NE</u>	<u>Sec. 30</u>	<u>T40N</u>	<u>R20W</u>
East Fork Black River	Reynolds	<u>NE</u>	<u>Sec. 08</u>	<u>T33N</u>	<u>R02E</u>	<u>SW</u>	<u>Sec. 16</u>	<u>T33N</u>	<u>R02E</u>
East Fork Crooked River	Ray	<u>NE</u>	<u>Sec. 02</u>	<u>T52N</u>	<u>R27W</u>	<u>SE</u>	<u>Sec. 14</u>	<u>T52N</u>	<u>R27W</u>
East Fork Grand River	Worth	<u>N 1/2</u>	<u>Sec. 32</u>	<u>T66N</u>	<u>R30W</u>	<u>NW</u>	<u>Sec. 13</u>	<u>T65N</u>	<u>R31W</u>
Grindstone Creek	Dekalb	<u>SW</u>	<u>Sec. 10</u>	<u>T58N</u>	<u>R30W</u>	<u>NW</u>	<u>Sec. 02</u>	<u>T58N</u>	<u>R30W</u>
Heaths Creek	Pettis/Saline	<u>SW</u>	<u>Sec. 20</u>	<u>T48N</u>	<u>R20W</u>	<u>N 1/2</u>	<u>Sec. 23</u>	<u>T48N</u>	<u>R20W</u>
Honey Creek	Nodaway	<u>SW</u>	<u>Sec. 25</u>	<u>T65N</u>	<u>R34W</u>	<u>SW</u>	<u>Sec. 25</u>	<u>T65N</u>	<u>R34W</u>
Horse Creek	Cedar	<u>SW</u>	<u>Sec. 09</u>	<u>T34N</u>	<u>R28W</u>	<u>N 1/2</u>	<u>Sec. 02</u>	<u>T34N</u>	<u>R28W</u>
<i>[Huffstetter Lateral Ditch]</i>	<i>[Stoddard]</i>						<i>[Sec. Corner 17, 18, 19, 20]</i>	<i>[T24N]</i>	<i>[R11E]</i>

Reason: Lack of water due to irrigation withdrawal.

<u>Huzzah Creek</u>	<u>Crawford</u>	<u>SE</u>	<u>Sec. 29</u>	<u>T36N</u>	<u>R02W</u>	<u>NE</u>	<u>Sec. 18</u>	<u>T36N</u>	<u>R02W</u>
Jacks Fork River	Texas/Shannon	<u>SE</u>	<u>Sec. 35</u>	<u>T28N</u>	<u>R07W</u>	<u>NW</u>	<u>Sec. 04</u>	<u>T27N</u>	<u>R06W</u>
<u>Jones Creek</u>	<u>Jasper</u>	<u>N 1/2</u>	<u>Sec. 24</u>	<u>T27N</u>	<u>R31W</u>	<u>NW</u>	<u>Sec. 12</u>	<u>T27N</u>	<u>R31W</u>
Little Black River	Ripley	<u>E 1/2</u>	<u>Sec. 09</u>	<u>T24N</u>	<u>R03E</u>	<u>SE</u>	<u>Sec. 23</u>	<u>T24N</u>	<u>R03E</u>
Little Drywood Creek	Vernon	<u>NW</u>	<u>Sec. 06</u>	<u>T33N</u>	<u>R31W</u>	<u>SE</u>	<u>Sec. 30</u>	<u>T35N</u>	<u>R31W</u>
<u>Little Fox River</u>	<u>Clark</u>	<u>SE</u>	<u>Sec. 14</u>	<u>T66N</u>	<u>R09W</u>	<u>SE</u>	<u>Sec. 24</u>	<u>T66N</u>	<u>R09W</u>
Little Maries River	Maries	<u>SW</u>	<u>Sec. 34</u>	<u>T41N</u>	<u>R10W</u>	<u>W 1/2</u>	<u>Sec. 26</u>	<u>T41N</u>	<u>R10W</u>
Little Niangua River	Hickory	<u>NE</u>	<u>Sec. 26</u>	<u>T37N</u>	<u>R20W</u>	<u>S 1/2</u>	<u>Sec. 35</u>	<u>T38N</u>	<u>R20W</u>
Little Piney Creek	Phelps	<u>NE</u>	<u>Sec. 05</u>	<u>T35N</u>	<u>R08W</u>	<u>NE</u>	<u>Sec. 31</u>	<u>T36N</u>	<u>R08W</u>
Little Whitewater River	Cape Girardeau	<u>NW</u>	<u>Sec. 01</u>	<u>T32N</u>	<u>R09E</u>	<u>NE</u>	<u>Sec. 16</u>	<u>T32N</u>	<u>R10E</u>
Locust Creek	Putnam	<u>S 1/2</u>	<u>Sec. 10</u>	<u>T66N</u>	<u>R20W</u>	<u>NE</u>	<u>Sec. 34</u>	<u>T66N</u>	<u>R20W</u>
Long Branch Platte River	Nodaway	<u>SE</u>	<u>Sec. 30</u>	<u>T63N</u>	<u>R34W</u>	<u>NE</u>	<u>Sec. 29</u>	<u>T62N</u>	<u>R34W</u>
Loutre River	Montgomery	<u>E 1/2</u>	<u>Sec. 17</u>	<u>T48N</u>	<u>R06W</u>	<u>SE</u>	<u>Sec. 10</u>	<u>T47N</u>	<u>R06W</u>
<u>Main Ditch</u>	<u>Dunklin</u>	<u>S 1/2</u>	<u>Sec. 20</u>	<u>T20N</u>	<u>R10E</u>	<u>NE</u>	<u>Sec. 08</u>	<u>T19N</u>	<u>R10E</u>
Maple Slough Ditch	Mississippi	<u>NW</u>	<u>Sec. 34</u>	<u>T25N</u>	<u>R15E</u>	<u>Sec 3 & 4 Line</u>		<u>T24N</u>	<u>R15E</u>
Marble Creek	Madison	<u>E 1/2</u>	<u>Sec. 24</u>	<u>T32N</u>	<u>R04E</u>	<u>E 1/2</u>	<u>Sec. 21</u>	<u>T32N</u>	<u>R05E</u>
Marrowbone Creek	Daviess	<u>SW</u>	<u>Sec. 18</u>	<u>T58N</u>	<u>R27W</u>	<u>NE</u>	<u>Sec. 08</u>	<u>T58N</u>	<u>R27W</u>
Meramec River	<i>[Crawford]</i> Dent	<u>SE</u>	<u>Sec. 13</u>	<u>T35N</u>	<u>R05W</u>	<u>SW</u>	<u>Sec. 11</u>	<u>T35N</u>	<u>R05W</u>
Middle Fabius River	Lewis	<u>NE</u>	<u>Sec. 15</u>	<u>T62N</u>	<u>R09W</u>	<u>E 1/2</u>	<u>Sec. 04</u>	<u>T61N</u>	<u>R08W</u>
<u>Mikes Creek</u>	<u>McDonald</u>	<u>E 1/2</u>	<u>Sec. 15</u>	<u>T22N</u>	<u>R30W</u>	<u>SE</u>	<u>Sec. 16</u>	<u>T22N</u>	<u>R30W</u>
<u>Mill Creek</u>	<u>Phelps</u>	<u>NE</u>	<u>Sec. 08</u>	<u>T36N</u>	<u>R09W</u>	<u>NW</u>	<u>Sec. 28</u>	<u>T37N</u>	<u>R09W</u>
<u>Moniteau Creek</u>	<u>Cooper</u>	<u>SW</u>	<u>Sec. 20</u>	<u>T46N</u>	<u>R016W</u>	<u>E 1/2</u>	<u>Sec. 23</u>	<u>T46N</u>	<u>R16W</u>
No Creek	Livingston/Grundy	<u>S 1/2</u>	<u>Sec. 31</u>	<u>T60N</u>	<u>R23W</u>	<u>SE</u>	<u>Sec. 01</u>	<u>T59N</u>	<u>R24W</u>
North Fork River	Douglas	<u>SE</u>	<u>Sec. 12</u>	<u>T26N</u>	<u>R12W</u>	<u>SW</u>	<u>Sec. 19</u>	<u>T26N</u>	<u>R11W</u>
North River	Marion	<u>SE</u>	<u>Sec. 24</u>	<u>T58N</u>	<u>R08W</u>	<u>SE</u>	<u>Sec. 32</u>	<u>T58N</u>	<u>R07W</u>
Petite Saline Creek	Cooper	<u>W 1/2</u>	<u>Sec. 15</u>	<u>T48N</u>	<u>R16W</u>	<u>SE</u>	<u>Sec. 12</u>	<u>T48N</u>	<u>R16W</u>
Pomme De Terre River	Polk	<u>NE</u>	<u>Sec. 16</u>	<u>T31N</u>	<u>R20W</u>	<u>SW</u>	<u>Sec. 01</u>	<u>T31N</u>	<u>R21W</u>
<u>Richland Creek</u>	<u>Morgan</u>	<u>NW</u>	<u>Sec. 04</u>	<u>T43N</u>	<u>R18W</u>	<u>SE</u>	<u>Sec. 28</u>	<u>T44N</u>	<u>R18W</u>
River Aux Vases	Ste. Genevieve	<u>E 1/2</u>	<u>Sec. 33</u>	<u>T37N</u>	<u>R08E</u>	<u>SW</u>	<u>Sec. 26</u>	<u>T37N</u>	<u>R08E</u>
<u>Saline Creek</u>	<u>Miller</u>	<u>NW</u>	<u>Sec. 23</u>	<u>T41N</u>	<u>R14W</u>	<u>NW</u>	<u>Sec. 25</u>	<u>T41N</u>	<u>R14W</u>
Saline Creek	Ste. Genevieve	<u>NE</u>	<u>Sec. 35</u>	<u>T36N</u>	<u>R08E</u>	<u>SW</u>	<u>Sec. 32</u>	<u>T36N</u>	<u>R09E</u>
Sinking Creek	Reynolds	<u>SE</u>	<u>Sec. 32</u>	<u>T31N</u>	<u>R04W</u>	<u>NE</u>	<u>Sec. 35</u>	<u>T30N</u>	<u>R02E</u>
Sinking Creek	Shannon	<u>SE</u>	<u>Sec. 17</u>	<u>T30N</u>	<u>R02E</u>	<u>SE</u>	<u>Sec. 08</u>	<u>T30N</u>	<u>R04W</u>
<u>South Fabius River</u>	<u>Marion</u>	<u>S</u>	<u>Sec. 18</u>	<u>T59N</u>	<u>R08W</u>	<u>SE</u>	<u>Sec. 26</u>	<u>T59N</u>	<u>R08W</u>

<u>STREAMS</u>	<u>COUNTIES</u>	<u>UPSTREAM LOCATION</u>				<u>DOWNTSTREAM LOCATION</u>			
<u>South River</u>	<u>Marion</u>	<u>NW</u>	<u>Sec. 06</u>	<u>T57N</u>	<u>R05W</u>	<u>SW</u>	<u>Sec. 21</u>	<u>T58N</u>	<u>R05W</u>
<u>Spring Creek</u>	<u>Adair</u>	<u>N 1/2</u>	<u>Sec. 14</u>	<u>T63N</u>	<u>R17W</u>	<u>NE</u>	<u>Sec. 30</u>	<u>T63N</u>	<u>R16W</u>
<u>Spring Creek</u>	<u>Douglas</u>	<u>NW</u>	<u>Sec. 26</u>	<u>T25N</u>	<u>R11W</u>	<u>NW</u>	<u>Sec. 34</u>	<u>T25N</u>	<u>R11W</u>
<u>Tavern Creek</u>	<u>Miller</u>	<u>NW</u>	<u>Sec. 07</u>	<u>T38N</u>	<u>R12W</u>	<u>NW</u>	<u>Sec. 33</u>	<u>T39N</u>	<u>R12W</u>
<u>Turnback Creek</u>	<u>Lawrence</u>		<u>Sec. 29</u>	<u>T29N</u>	<u>R25W</u>	<u>SE</u>	<u>Sec. 12</u>	<u>T29N</u>	<u>R26W</u>
<u>West Fork Big Creek</u>	<u>Harrison</u>	<u>NE</u>	<u>Sec. 15</u>	<u>T65N</u>	<u>R28W</u>	<u>SW</u>	<u>Sec. 22</u>	<u>T65N</u>	<u>R28W</u>
<u>West Locust Creek</u>	<u>Sullivan</u>	<u>SW</u>	<u>Sec. 03</u>	<u>T62N</u>	<u>R21W</u>	<u>N 1/2</u>	<u>Sec. 23</u>	<u>T62N</u>	<u>R21W</u>
<u>West Piney Creek</u>	<u>Texas</u>	<u>NW</u>	<u>Sec. 20</u>	<u>T30N</u>	<u>R10W</u>	<u>SW</u>	<u>Sec. 10</u>	<u>T30N</u>	<u>R10W</u>
<u>White Cloud Creek</u>	<u>Nodaway</u>	<u>NW</u>	<u>Sec. 06</u>	<u>T62N</u>	<u>R35W</u>	<u>SE</u>	<u>Sec. 18</u>	<u>T62N</u>	<u>R35W</u>